

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number  
**WO 2005/007624 A2**

- (51) International Patent Classification<sup>7</sup>: **C07D**
- (21) International Application Number:  
PCT/US2004/021813
- (22) International Filing Date: 7 July 2004 (07.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/485,451 7 July 2003 (07.07.2003) US  
60/513,109 20 October 2003 (20.10.2003) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COMPOSITIONS OF ORTHOGONAL GLUTAMYL-TRNA AND AMINOACYL TRNA SYNTHETASE PAIRS AND USES THEREOF

(57) Abstract: Compositions and methods of producing components of protein biosynthetic machinery that include glutamyl orthogonal tRNAs, glutamyl orthogonal aminoacyl-tRNA synthetases, and orthogonal pairs of glutamyl tRNAs/synthetases are provided. Methods for identifying these orthogonal pairs are also provided along with methods of producing proteins using these orthogonal pairs.

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